This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-6 (cancelled)

Claim 7 (currently amended) ~~The method of claim 5, wherein said cell is labeled by transfecting said cell with a DNA molecule encoding said~~ A method of monitoring at least one cell or tissue in a biological system comprising:

a) providing said biological system comprising said at least one cell or tissue;

b) labeling said at least one cell or tissue with at least one apo metal binding protein;

c) providing conditions which permit said at least one apo metal binding protein to emit a signal;

d) observing or measuring the signal; and

e) monitoring said at least one cell or tissue based on the signal observed or measured;

wherein the cell is labeled by introducing into said cell a DNA molecule encoding said at least one apo metal binding protein.

Claims 8-13 (cancelled)

Claim 14 (currently amended) ~~The method of claim 7, wherein said protein is labeled by preparing a fusion protein with said protein and~~ A method of monitoring at least one cell or tissue in a biological system comprising:

a) providing said biological system comprising said at least one cell or tissue;

b) labeling said at least one cell or tissue with at least one apo metal binding protein;

c) providing conditions which permit said at least one apo metal binding protein to emit a signal;

d) observing or measuring the signal; and

e) monitoring said at least one cell or tissue based on the signal observed or measured;

wherein the cell is labeled by introducing into said cell a DNA molecule encoding a fusion protein comprising at least one apo metal binding protein.

Claims 15-16 (cancelled)

Claim 17 (currently amended) ~~The method of claim 15,~~ A method of monitoring at least one cell or tissue in a biological system comprising:

a) providing said biological system comprising said at least one cell or tissue;

b) labeling said at least one cell or tissue with at least one apo metal binding protein;

c) providing conditions which permit said at least one apo metal binding protein to emit a signal;

d) observing or measuring the signal; and

e) monitoring said at least one cell or tissue based on the signal observed or measured;

wherein said conditions which permit said at least one apo metal binding protein to emit a signal comprise providing at least one metal which binds to said at least one apo metal binding protein; wherein said apo metal binding protein is a blue copper protein chosen from azurin, pseudo-azurin, a plastocyanin, and a phytocyanin.

Claims 18-35 (canceled)

Claim 36 (currently amended) A method of monitoring at least one target substance in a biological system comprising:

a) providing said biological system comprising said at least one target substance, wherein said at least one target substance is a cell that is labeled by transfecting said cell with a DNA molecule encoding said at least one apo metal binding protein;

~~b) labeling said at least one target substance with at least one apo metal binding protein, wherein said apo metal binding protein is a protein capable of binding itself to said metal;~~

~~c)~~b) providing conditions which permit said at least one apo metal binding protein to emit a signal;

~~d)~~c) observing or measuring the signal; and

~~e)~~d) monitoring said at least one target substance based on the signal observed or measured.

Claim 37 (currently amended) The method of claim 36, wherein said ~~protein~~cell is labeled by ~~preparing a fusion protein with said protein and~~ introducing into said cell a DNA molecule encoding a fusion protein which has at least one apo metal binding protein.

Claim 38 (previously presented) A method of monitoring at least one target substance in a biological system comprising:

a) providing said biological system comprising said at least one target substance;

b) labeling said at least one target substance with at least one apo metal binding protein, wherein said apo metal binding protein is a blue copper protein, and said blue copper protein is chosen from azurin, pseudo-azurin, a plastocyanin, and a phytocyanin;

c) providing conditions which permit said at least one apo metal binding protein to emit a signal, wherein said conditions which permit said at least one apo metal binding protein to emit a signal comprise providing at least one metal which binds to said at least one apo metal binding protein;

d) observing or measuring the signal; and

e) monitoring said at least one target substance based on the signal observed or measured.